OBSERVATIONS ON PROCESSIONARY CATERPILLARS

By Mrs. M. B. MILLS, Merredin.

On January 17, 1949, a number of white fluffy masses, measuring a few inches across, were found at the butts of jam and wattle trees. These were the homes or shelters of Processionary Caterpillars,* and had the tiny caterpillars within.

A week later three of the fluffy shelters under observation, two at jam trees, one at a wattle tree, had fine silken threads, like spider web, leading from the shelters up the trees to the leaves. On the evening of January 23 the caterpillars, rather slender, about half-an-inch in length, grey in colour, with fine long hairs on their bodies, emerged from a shelter, coming out of many small holes in the top of it. They joined in single file and ascended the jam tree, following silken threads already there and leaving more silken threads as they climbed. Of three lots of caterpillars under observation, a short distance apart, each lot was ascending a tree at this hour—7 p.m. The line of climbing caterpillars was 4 to 5 feet in length. Later in the evening the caterpillars descended the trees in the same single file manner and disappeared into the shelters.

The following day they were not seen.

The next observation was on January 28, at 9 p.m. One lot was descending a jam tree; apparently they were returning after feeding on the leaves.

On February 2, at midday, one lot of caterpillars had grouped at the butt of the tree, outside the shelter; they had silken threads over their bodies, and were in a close mass, some lying on top of others. They remained thus, until 7.30 p.m. Then they began to ascend the tree, the leader and a small number in single file, the largest part of the group with as many as six caterpillars climbing abreast, the rest thinning out until they fell into single file. On reaching the leaves they separated into small groups to feed Although a strong wind was blowing they had a firm hold on the branches and no caterpillars fell off while they were under observation. At 9.15 p.m. the caterpillars had ceased feeding and were all grouped together on a forked branch.

Next morning, February 3, at 8.30 o'clock the caterpillars descended from the tree, and travelling, not in single file, but in twos and threes abreast, set off towards a eucalypt sapling. They crossed a line of small ants, but the ants did not attack them, instead the ants made a detour. The caterpillars grouped together in a sandy place near the sapling, later returning to the jam tree.

The other two groups of caterpillars were behaving in a similar way.

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*The larvae of the Bag Shelter Moth *(Ochrogaster contraria* Walk.).

Later it was found that the caterpillars at the wattle tree did not seem as restless as the other groups, which frequently moved from tree to tree, making new shelters. The only trees chosen were jams or wattles. Perhaps these groups had frequently moved owing to disturbances, sheep foraging under the trees, and poultry scratching in the fallen leaves. The caterpillars at the wattle tree were on the other side of the fence, and so were free from disturbances of this kind.

The following notes refer to the Processionary Caterpillars at the wattle tree, and not to the other groups.

On February 11, at 4 p.m., the caterpillars at the wattle tree had left their fluffy shelter and were grouped at the butt of the tree. They had now grown to about one inch in length, and at the shelter were many discarded skins, which the caterpillars had shed. At 7.20 p.m. some of the caterpillars ascended the tree and were grouped a few feet from the ground. A small number had remained at the butt of the tree, and were starting to ascend. When they arrived at the first group the latter were descending.

On February 13, Processionary Caterpillars were grouped on the tree a few inches from the ground. They appeared to be restless and were moving about spreading silken threads over the main part of the group, from the tree to blades of grass. Next evening they ascended the tree to feed.

On February 15, again the caterpillars appeared to be restless, spreading threads as before.

The following day the shelter was completed. In the afternoon, which was showery, the caterpillars were snugly grouped in the new shelter. They remained within the following day also.

On February 18, the caterpillars, after shedding their skins, left the shelter and travelled 10 feet to a prickly bush where they completely hid themselves under leaves, bark and prickles. The following morning the caterpillars remained under the leaves and bark. They had made a shelter with silken threads over themselves, and were very well hidden. At evening they remained in shelter and did not appear to have emerged.

The two following days marked no change in the behaviour of the caterpillars, but on February 22, they again shed their skins and emerged from the shelter to feed on a young wattle 3 feet away. Some of the leaves were completely eaten.

During the morning of February 24 caterpillars moved to a new place at the same prickly bush. They were now handsome individuals with the long, fine hairs on their bodies. During the three following days the caterpillars ascended the young wattle tree at evening, to feed, and later at night, returned to the shelter. Here they remained the next four days.

On March 8, the caterpillars shed their skins, remaining at the shelter but coming out as usual to feed.

By March 12, Processionary Caterpillars were quite large, being about 2 inches in length.

For the following 11 days there is nothing new to note, they remain at the shelter, coming out at evening to feed, then later, returning to the shelter.

On the morning of Mareh 24, the eaterpillars left the shelter and travelled single file to a new plaee 80 yards away. In doing so they had to eross a road. Here tragedy overtook them in the form of a motor truek. Many were killed but the line joined up and proeeeded on. They made a new shelter under a rusty tin, where they were eompletely hidden. A thiek silken trail lead to a jam tree 6 feet away, where they fed on the leaves.

On April 20, 27 days later, the eaterpillars left the shelter. They had not shed their skins during this period, apparently. It appeared that they had been disturbed, even forcibly ejeeted from the shelter, whieh was in a very disordered state, probably by a golfer, as their shelter was very elose to golf links. From footprints it seemed likely that a golf ball might have been aeeidently hit into the tin. The golfer in an effort to retrieve his ball had raked out the eaterpillars. They left a thiek, irregular, elearly defined trail to a heap of dry leaves, 20 paees away, where the silken trail abruptly ended. No further traee of them eould be found, although an extensive seareh was made. There is a large floek of erows in the vieinity and they may have eaten the eaterpillars.

The following notes refer to observations on the group at the jam trees, whieh were mentioned earlier.

One of the previous lots, whieh had made their shelters at jam trees, left the shelter one morning and travelled in a southerly direetion. After 10 yards they left the sheltering trees and bushes, and were now out in a clear paddoek. They continued in this direetion for 22 yards and then turned eastwards, eovering a distanee of 26 yards. They finally turned about in a semi-eirele, returning to the trees they set out from. In all the eaterpillars had travelled a distanee of 91 yards.

They made a new shelter under a flat pieee of tin, a few feet from a jam tree. They shed their skins then moved 5 yards to another tree, making a shelter under pieees of serap iron and leaves.

On April 25 the eaterpillars moved 10 yards to a jam tree, where a shelter was made under dry leaves, straw and bark.

At each of the shelters the eaterpillars had eome out at evening to feed, aseending the trees to the leaves, later returning to the shelters.

The Proeessionary Caterpillars left the shelter on May 13 and no further traee of them eould be found. A single silken thread showed on the ground to mark the direetion whieh they had taken, but it was quite impossible to follow it up.

The other group had also disappeared, a few days earlier.

Under the old shelter the eaterpillars hollowed out small depressions in the ground. At the last shelter of the eaterpillars mentioned for May 13 quite a large shelter had been made under the ground. Two holes about the size of a shilling pieee, had been

made in the earth. These were tightly packed with shed skins. The holes went straight down, until they came to a main root of the jam tree. Here the caterpillars appeared to have hollowed out a cavity to go underneath the root.

When cut through the root near the tree was quite healthy and without injury. The same applied about 12 inches further along the root, in the middle portion, where the root was badly damaged, the centre having been eaten out as a tunnel about 6 inches long (perhaps by wood borers, which are numerous in this district).

The caterpillars had lived in the cavity in the root, cast skins and hairs from their bodies adhered to the sides of the tunnel. They had gone underground about 10 inches before coming to the root. Hollow silken "air-pipes" were found there also.

MIMICRY IN THE BROWN THORNBILL

By Mrs. RICA ERICKSON, "Fairlea," Bolgart

The Brown Thornbills *(Acanthiza pusilla)* on "Fairlea" are attracted by any new sounds in their area and will copy some of them soon after hearing them. In general the mimicry seems to be easily achieved and not merely recognisable but deceptive. When something difficult is attempted, such as long phrases from the song of the Western Shrike-Thrush *(Colluricincla rufiventris)* or the challenge song of the Rufous Whistler *(Pachycephala rufiventris)* the result is awkward to begin with, although proficiency is achieved with assiduous practice.

A pair of Brown Thornbills in the creek timber liked the company of Rufous Whistlers and became very proficient in copying their calls. I found it necessary to check up on the origin of whistler notes before accepting the evidence of my ears. They not only led me astray with their mimicry of young whistlers just learning to sing "sweet swt-swt-swt," but later copied the plaintive notes of an unmated female. One also learned to imitate the long territory challenge so well that I was entirely deceived, although it became evident that the whistler was not. The performance is worthy of a detailed report.

I could not understand why the usually aggressive Rufous Whistler tolerated the presence of this intruder. The whistler preened himself unconcernedly while he replied to challenges issued from the heart of his territory. A search revealed a Brown Thornbill which was mimicking every phrase after it was sung. The whistler semed to be conscious of teaching his song and would elaborate it a little each time and then would listen as if to judge whether the copy was good. Both birds invited replies and for many minutes there was a constant flow of song. Except for the slower opening note the Brown Thornbill's song was indistinguishable from the Rufous Whistler's. A phonetic rendering of the phrase is attempted here: "Soo-ee-swt-sue-swt-swt-swt-chrry-chrry-chrry-swt-sue-joey."